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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/403,844	04/18/95	FODSTAD O	7885.33USWO

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1641	31

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
08/403,844	Fodstad et al.
Examiner	**Group Art Unit**
Gailene R. Gabel	1641

☒ Responsive to communication(s) filed on *Jul 10, 2000*

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *22-25, 28, 29, 33-40, 43, 46-48, 51, 59-62, 64, 66, 67, 69, 71, 72, 75, 78, 79,* 87-89, 92-93, 96, 101, 105-107 is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *22-25, 28, 29, 33-40, 43, 46-48, 51, 59-62, 64, 66, 67, 69, 71, 72, 75, 78, 79, 87-89,* 92-93, 96, 101, 105-107 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Amendment Entry

1. Applicants' amendment and response filed 7/10/2000 in Paper No. 30 is acknowledged and has been entered. Claims 39 and 71 have been amended. Currently, claims 22-25, 28-29, 33-40, 43, 46-48, 51, 59-62, 64, 66-67, 69, 71-72, 75, 78-79, 87-89, 92-93, 96, 101, and 105-107 are pending and under examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 22-25, 28-29, 33-40, 43, 46-48, 51, 59-62, 64, 66-67, 69, 71-72, 75, 78-79, 87-89, 92-93, 96, 101, and 105-107 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 is unclear and indefinite in reciting "a single cell suspension prepared from a solid tissue" because it is unclear as to whether applicants intend to mean "a homogeneous cell population" prepared from a solid tissue or do they intend to mean "one single cell in a suspension prepared from a solid tissue". See also claim 48.

Claim 22 is incomplete for omitting essential elements and method steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 22 (d) recites "quantitating ... target cell/bead rosettes" but it is unclear how target cell/bead rosettes can be detected for quantitation in the absence of a label, i.e. enzyme label for use in immunohistochemical staining. Claim 22 appears to be drawn to a method of detecting a specific target cell in a cell suspension but elements are lacking so as to specifically define a "detection" step such that a detection can be effected.

The term "high" in claim 39 is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. See also claim 71.

Claim 39 recites acronyms or abbreviations, e.g. GMP, CEA. Acronyms of abbreviations should be fully recited or defined at least one time in a given set of claims. See also claim 71.

Claim 46 is indefinite in reciting "effective for coating" because the term "effective" is a subjective term which lacks a comparative basis for defining its metes and bounds.

Claim 46 is incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. It is unclear what structural cooperative relationship exists between the (first) monoclonal antibody and labeled second monoclonal antibody in claim 46 so as to enable use of

the kit for the method in claim 22 to which it depends since claim 22 does not appear to have a recitation of "a labeled second antibody".

Claim 48 is incomplete for omitting essential elements and method steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 22 (d) recites "quantitating ... target cell/bead rosettes" but it is unclear how target cell/ bead rosette formation is effected in © for target cell detection and quantitation in (d) in the absence of a source of target cell since the elements in method steps (a) and (b) only incorporate a first antibody and a second monoclonal antibody coated into paramagnetic particles, respectively. Applicants appear to imply rather than specifically recite that the antibodies and paramagnetic particles are specifically contacted to or mixed with a cell suspension of mixed cell population for subsequent binding and detection of target cells.

Claim 48 (d) is further vague and indefinite in reciting "quantitating ... target cell/bead rosettes" because it is unclear how target cell/bead rosettes can be detected for quantitation in the absence of a label, i.e. enzyme label for use in immunohistochemical staining. Claim 48 appears to be drawn to a method of detecting a specific target cell in a cell suspension but elements are lacking so as to specifically define a "detection" step such that a detection can be effected.

Claim 62 recites parenthetical symbols which renders the claim indefinite because it is unclear as to whether the limitation inside the parenthesis is part of the claim.

The term "low" in claim 62 is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for

ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 78 is incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. It is unclear what structural cooperative relationship exists between the first monoclonal antibody, second monoclonal antibody, and labeled third monoclonal antibody in claim 78 so as to enable use of the kit for the method in claim 48 to which it depends since claim 48 does not appear to have a recitation of "a labeled third antibody".

Claim 87 is incomplete for omitting essential elements and method steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 87 (d) recites "quantitating ... tumor cell/bead rosettes" but it is unclear how target cell/bead rosettes can be detected for quantitation in the absence of a label, i.e. enzyme label for use in immunohistochemical staining. Claim 87 appears to be drawn to a method of detecting a specific tumor cells in a cell suspension but elements are lacking so as to specifically define a "detection" step such that a detection can be effected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The rejection of claims 22-25, 28-29, 33, and 105 under 35 U.S.C. 103(a) as being unpatentable over Widder et al. (EP 016,552) in view of Connelly et al. (US 5,422,277) is withdrawn in light of a new ground of rejection.

4. The rejection of claims 22, 34-40, 43, 48, 67, 69, 71, 72, 75, 87-89, 92, 93, 96, and 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widder et al. (EP 016,552) in view of Kemmer et al. (Journal of Immunological Methods, 1992) and Holmes et al. (WO 91/09938) and in further view of Terasaki et al. (U.S. Patent 4,752,569) is withdrawn in light of a new ground of rejection.

5. The rejection of claims 22, 46-48, 51, 59-62, 64, 66, 67, 69, 71, 78-79, 106, and 107 under 35 U.S.C. 103(a) as being unpatentable over Widder et al. (EP 016,552) in view of Forrest et al. (US 4,659,678) is withdrawn in light of a new ground of rejection.

6. Claims 22-25, 28-29, 33-40, 43, 46-48, 51, 59-62, 64, 66-67, 69, 71-72, 75, 78-79, 87-89, 92-93, 96, 101, and 105-107 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 5,374,531) taken altogether with Hermentin et al. (US 5,095,097) or Ullman et al. (US 5,536,644) for reason of record.

Double Patenting

7. In light of Applicants' amendment and arguments, the provisional statutory double patenting rejection to claims 22-23, 28-29, 33-40, 46-48, 51, 59-62, 64, 66-67, 69, 71-72, 75, 79, 87-89, 92-93, 96, 101, and 105-107 under 35 U.S.C. 101 as claiming the same invention as that of claims 19-24, 26-40, 44, 45, 47-72, 74-89, 93-109, and 118-122 of copending Application No. 08/704,619 is, hereby, withdrawn.

New Grounds of Rejection

8. Claims 22-25, 28-29, 33, 37-38, 48, 51, 59-62, 64, 69, 101, and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widder et al. (EP 016,552) in view of Connelly et al. (US 5,422,277).

Widder et al. teach a method for separation of select population of cells from a mixed cell population using magnetic particles coated with a layer of specific antibodies which selectively bind to the select population. The coated microspheres with antibodies specific to target cells are contacted with the mixed population and the bound select population is magnetically separated from the mixed population (see page 4, last paragraph). The magnetically responsive microspheres have Protein A associated into the surface which selectively binds antibodies through the Fc region of the antibodies so that Fab arms of the antibodies extend outwardly for binding (see page 4, first paragraph). Widder et al. teach microspheres which are coupled with FITC conjugated rabbit IgG by incubation at 37°C for 20 minutes and examined (see page 10, Example 1). Furthermore, Widder et al. teach using the coated particles to separate red blood

cells (RBC) from suspensions containing a mixture of different RBCs. Antibodies were coupled to the microspheres by incubation of 0.5 mg of the microspheres suspended in 0.2 ml. of 0.9% NaCl solution containing 0.1% Tween 80 (polyethylene sorbitans monooleate). The RBCs were labeled with ^{51}Cr and incubated with mild agitation and bound microspheres were separated and counted using a gamma counter (see page 11, Example 2).

The method of Widder et al differs from the instant invention in failing to teach incubation of the antibody coated microspheres in mild detergent for 5-10 minutes to 2 hours at 4°C. Furthermore, Widder fails to teach the use of an antibody to immobilize antibodies on the surface of the magnetic particles.

Connelly et al. teach various fixatives used to fix cells without destroying cellular properties. Connelly et al. specifically teach fixing cells with phosphate buffer solution followed by DMSO and DNBS, Tween™ (polyethylene sorbitans monolaurate - Tween 20 or monooleate - Tween 80) and formaldehyde (see column 9, lines 10-14) and then incubating the cells for 20 minutes to 2 hours at temperatures ranging from 0°C to 37°C (see column 9, lines 20-48).

It would have been obvious to one of ordinary skill in the art to use antibodies to immobilize other antibodies on the surface of the magnetic particles in the method of Widder et al because such method of immobilizing antibodies on the surface of a solid support, such as magnetic particles is conventional and well known in the art. It would have been obvious to one of ordinary skill in the art to use detergents to treat cells as used by Connelly following certain specific temperature and time parameters because the use detergents to treat cells is well known

and conventional in the art for removing extraneous matter from the cells that will interfere with assays. One of ordinary skill in the art would have been motivated to incorporate Connelly's fixative techniques and parameters in Widder separation method because Connelly specifically states that one of ordinary skill in the art of cell fixation may routinely have to vary the aforementioned cell treatment parameters as in Widder's RBCs (dependent on cellular type) in order to obtain desired cell fixation without substantial destruction of cellular properties.

9. Claims 22, 46-48, 78-79, 106, and 107 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widder et al. and Connelly et al. (US 5,422,277) in view of Forrest et al. (U.S. Patent 4,659,678).

Widder et al. and Connelly et al. have been discussed supra. The methods of Widder et al. and Connelly et al. differ from the instant invention in failing to teach the use avidin-biotin system and a test kit.

Forrest et al teach a sandwich assay wherein a complex is formed between antigen in a sample and two or more antibody reagents and bound to solid supports such as magnetic or paramagnetic particles or beads having labeled or unlabeled antibodies attached thereto (see Abstract, column 1 and 2). The label employed may be selected from those known in the art such as fluorimetric or enzyme labeling. Forrest et al. teach using Protein A attached to the solid support and further attached to an antibody (see column 3-4). Forrest et al. teach using antibody reagents (which constitute intact antibodies or fragments thereof) that constitute a specific

binding protein such as avidin and biotin and adding the reagents in any order so as to optimize the reaction conditions (column 5).

It would have been obvious to one of ordinary skill in the art to use a binding system such as avidin-biotin as taught by Forrest et al. in the methods of Widder et al. and Connelly et al. because Forrest et al. teach that avidin-biotin provides a very rapid and high binding affinity which offers the advantage of a more accurate and rapid assay.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use a binding system used by Forrest et al. in the methods of Widder et al. and Connelly et al., as modified by Forrest et al in a test kit arrangement because test kits are conventional and well known in the art for their recognized advantages of convenience and economy.

10. Claims 22, 34-36, 39, 40, 43, 48, 66, 67, 71, 72, 75, 87-89, 92, 93, and 96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widder et al. (EP 016,552) and Connelly et al. (US 5,422,277) in view of Kemmer et al. (Journal of Immunological Methods, 1992) and Holmes et al. (WO 91/09938).

Widder et al. and Connelly et al. have been discussed supra. The methods of Widder et al. and Connelly et al. differ from the instant invention in failing to teach separation and detection of specific cells, in this case, cancer cells.

Kemmer et al. teach isolation of tumor cells from a mixed cell suspension of human tumor tissue which contains tumor cells, leucocytes, and erythrocytes, using magnetic beads coated with monoclonal antibodies.

Holmes et al. teach a method of separating hematopoietic progenitor cells from a mixed population of hematopoietic cells which contain malignant cells using microbeads coated with murine antibody which binds to the Fc portion of IgG murine antibodies or Protein A which reacts universally with the Fc portion of virtually all IgG antibodies (see page 6, lines 8-24). The mixed population of Holmes et al. is commonly derived from the bone marrow mononuclear cells, fetal, and umbilical cord blood or adult human blood.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the method of cell separation taught by Widder, as modified by Connelly, to separate cells from a variety of cell samples as taught by Kemmer and Holmes because Kemmer and Holmes teach that it is advantageous to remove tumor cells from a mixed population using magnetic microbeads coated with either monoclonal antibodies or protein A for the purpose of further studying the tumor cells or to purge a sample of tumor cells. The use of various monoclonal antibodies specific for antigens present on the cell surface for binding, separation, and detection is well known in the art and a skilled artisan would have had a reasonable expectation of success in choosing an antibody that is specific for an antigen present on the surface if the cell population of interest.

Response to Arguments

11. A) Applicants argue that Widder discloses a method for coarse separation and not the detection of a target cells. Applicants further argue that there is no teaching or suggestion in Widder of forming target cell-bead rosettes which can be quantified.

Contrary to Applicants' argument, Widder does teach a method for separating target cells from a mixed cell population using magnetic particles coated with a layer of monoclonal antibodies that are specific to membrane structures for selective binding to and detection of target cells. In Example 2, Widder uses a gamma counter to detect RBCs as target cells that were labeled and bound to microsphere particles.

B) Applicants argue that Widder teaches coating the microspheres with Protein A which reduces specificity to target cells and therefore incorporation of Protein A in Widder cannot achieve the specificity of the instant invention.

In response, the instant invention claims a method for "detecting a specific target cell ... comprising the steps of: ... coating paramagnetic particles ... with a monoclonal antibody" which as recited does not exclude the use of Protein A.

C) Applicants further argue that Connelly fails to cure deficiencies in the Widder reference and further differs from the instant invention because Connelly fixes killed, rather than live, target cells.

In response, Connelly teaches incubating the cell suspensions with a detergent, polyoxyethylene sorbitan monolaurate which fixes internal components of target cells without

destroying cellular properties which is the same reagent used in the instant invention in claims 29 and 61. Specifically, Connelly teaches various reagents for use in fixing cells without destroying cellular properties by incubating at decreased temperatures in column 9, lines 20-48. Absent any evidence to the contrary, the polyoxyethylene sorbitan monolaurate "fixative" in Widder reference would have retained the viability of the cells of Widder in the same manner as would the polyoxyethylene sorbitan monolaurate "detergent" used in the instant invention.

D) Applicants argue that there is no teaching, suggestion, or motivation to combine Widder with Connelly.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to use antibodies to immobilize other specific antibodies on the surface of the magnetic particles in the method of Widder because such method of immobilizing highly specific antibodies on the surface of a solid support, such as magnetic particles is conventional and well known in the art. It would have been obvious to one of ordinary skill in the art to use detergents in specific concentrations to treat cells as used by Connelly following certain specific temperature and time parameters because the

use detergents to treat cells is well known and conventional in the art for removing extraneous matter from the cells that will interfere with assays. One of ordinary skill in the art would have been motivated to incorporate Connelly's fixative techniques into Widder method because Connelly specifically states that one of ordinary skill in the art of cell fixation may routinely have to vary the aforementioned cell treatment parameters as in Widder's RBCs (dependent on cellular type) in order to obtain desired cell fixation without substantial destruction of cellular properties.

E) Applicants argue that the combination of Widder with Kemmer and Holmes fail to cure the deficiencies of Widder because both Kemmer and Holmes teach nonspecific methods and there is no reasonable expectation of success that the combination of all 3 methods can achieve detection of specific target cells. Applicants further argue that none of the references, alone or in combination, teach or suggest detection of specific target cells.

In response, Applicants' argument is now moot in light of a new ground of rejection. Refer to paragraph no. 10 and discussion, thereafter.

Contrary to Applicants' argument, Widder does teach a method for separating target cells from a mixed cell population using magnetic particles coated with a layer of monoclonal antibodies that are specific to membrane structures for selective binding to and detection of target cells. In Example 2, Widder uses a gamma counter to detect RBCs as target cells that were labeled and bound to microsphere particles.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

F) Applicants argue that the combination of Forrest with Widder does not overcome the deficiencies of Widder to arrive at the claimed invention. Specifically, there is no teaching or suggestion that incubation at 4°C can produce adequate binding to allow quantitation of target cell/bead rosettes.

In response, Applicants' argument is now moot in light of a new ground of rejection. Refer to paragraph no. 9 and discussion, thereafter.

G) Applicants argue that Jensen neither has the sensitivity nor the specificity of the presently claimed invention due to the incubation conditions taught by Jensen, typically 15-25°C which is known in the art to give unspecified binding to non-target cells. Applicants further argue that Jensen fails to teach or suggest an incubation temperature of 4°C which provides sufficient specificity for the instant invention.

In response, optimum incubation times and temperatures, i.e. 4°C, are result effective variables and can be determined via routine experimentation. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum of workable ranges by routine experimentation." Application of Aller, 220 F.2d 454, 456, 105 USPQ 233, 235-236 (C.C.P.A. 1955). "No invention is involved in discovering optimum ranges of a process by routine experimentation." Id. at 458, 105 USPQ at 236-237. The "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." Application of Boesch, 617 F.2d 272, 276, 205 USPQ 215, 218-219 (C.C.P.A. 1980).

H) Applicants further argue that there is no teaching or motivation to combine Jensen with Hermentin or Ullman to arrive at the presently claimed invention because both references disclose different methods. Applicants argue that the addition of reagents and mild detergents to prevent "nonspecific absorption onto paramagnetic particles" in the teaching of Hermentin or to dissolve "nonspecific aggregation" in the teaching of Ullman differ from the purpose of using mild detergent in the instant invention in preventing "unspecified binding of the antibody-particle complex".

In response, the fact that the applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In any case, the addition of mild detergents to prevent nonspecific binding, nonspecific absorption, or nonspecific aggregation all encompass the prevention of

unspecified binding between the paramagnetic particles, nonspecific antibodies, and nonspecific antigens from surface of non-target cells all of which have been described in the teaching of both Hermentin and Ullman.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have further been obvious to one of ordinary skill in the art at the time of the invention to modify the methods, reagents, kits of Jensen by adding a mild detergent as claimed to prevent or reverse nonspecific adsorption onto paramagnetic particles such as taught by Hermentin et al. or to release nonspecifically aggregated particles such as taught by Ullman et al. because one of ordinary skill in the art would have expected reduction of nonspecific binding and/or nonspecific aggregation of the particulate reagent to improve the sensitivity and specificity of the method of Jensen.

12. Applicants arguments were considered but are not persuasive. Therefore, no claims are allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gailene R. Gabel whose telephone number is (703) 305-0807. The examiner can normally be reached on Monday to Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Fridays from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le, can be reached on (703) 308-3399. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

10/10/00

Gailene R. Gabel
Patent Examiner
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MARY E. CEPERLEY
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ART UNIT 122/1641